

IN THE CLAIMS:

1-10. (Canceled)

11. (Original) An isolated nucleic acid comprising a nucleotide sequence that:

(a) encodes a polypeptide according to SEQ ID NO: 4; or

(b) encodes a polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

12. (Previously presented) The isolated nucleic acid of Claim 11, wherein said nucleic acid comprises a nucleotide sequence according to SEQ ID NO: 2 or the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

13-16. (Canceled)

17. (Currently amended) A nucleotide vector comprising the nucleic acid of Claim 11, or 12, 13, 14, 15, 16, 70 or 71.

18. (Currently amended) An expression vector comprising the nucleic acid of Claim 11, or 12, 13, 14, 15, 16, 70 or 71 in operative association with a nucleotide regulatory element that controls expression of the polypeptide encoded by said nucleotide sequence.

19. (Currently amended) A genetically engineered host cell comprising the nucleic acid of Claim 11, or 12, 13, 14, 15, 16, 70 or 71.

20. (Currently amended) A genetically engineered host cell comprising the nucleic acid of Claim 11, or 12, 13, 14, 15, 16, 70 or 71 wherein said nucleic acid is in operative association with a nucleotide regulatory element that controls expression of said nucleotide sequence in the host cell.

21-23. (Canceled)

24. (Original) A method for producing a recombinant polypeptide, comprising:

- (a) culturing a host cell transformed with the expression vector of Claim 18 and which expresses the recombinant polypeptide; and
- (b) recovering the recombinant polypeptide from the cell culture.

25-69. (Canceled)

70. (Currently amended) An isolated nucleic acid consisting of a nucleotide sequence encoding an extra-cellular domain of a canine MC4R corresponding to amino acids 1-46, 98-124, or 187-191, ~~or 268-279~~ of SEQ ID NO: 4 or of the polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.

71. (Currently amended) An isolated nucleic acid consisting of a nucleotide sequence encoding a cytoplasmic domain of a canine MC4R corresponding to amino acids 69-77, 147-163, or 216-244, ~~or 302-333~~ of SEQ ID NO: 4 or of the polypeptide encoded by the canine MC4R clone as deposited with the ATCC and having ATCC Accession No. PTA-1761.